

ABSTRAK

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Judul Skripsi : Pengaruh Ekstrak Kayu Bajakah Merah (*Spatholobus littoralis*) Terhadap Kadar Protein Pro-Apoptosis BAX pada Sel Kanker Payudara MCF-7 Serta Tinjauannya Dalam Pandangan Islam

Penanganan kanker payudara memerlukan agen kemopreventif yang efektif dan aman. Pemanfaatan ekstrak kayu bajakah merah (*Spatholobus littoralis*) telah diketahui menghambat viabilitas sel kanker payudara MCF-7 serta perannya dalam modulasi mekanisme apoptosis. Penelitian ini bertujuan untuk mengetahui sejauh mana kepastian rasio ekspresi protein Bax/Bcl-2 sel MCF-7 sebelum dan setelah diberi perlakuan ekstrak *S. littoralis* menggunakan konsentrasi IC_{50} melalui uji CCK-8. Pada penelitian ini, tamoxifen digunakan sebagai kontrol positif dan perubahan morfologi sel diamati secara mikroskopis. Kadar protein Bax dan Bcl-2 diukur menggunakan metode ELISA kemudian rasio Bax/Bcl-2 ditentukan sebagai indikator aktivasi apoptosis. Hasil penelitian ini menunjukkan bahwa ekstrak *Spatholobus littoralis* dengan konsentrasi 116.4 ppm dapat meningkatkan kadar Bax secara signifikan ($p < 0,05$) dibanding kontrol. Rasio Bax terhadap Bcl2 adalah 4.16 yang tidak berbeda nyata terhadap konsentrasi IC_{50} tamoxifen 4.8 ppm ($p > 0.05$). Hal ini menunjukkan potensi ekstrak kayu bajakah sebagai agen kemopreventif melalui induksi apoptosis pada sel MCF-7.

Kata Kunci: Apoptosis; Sel MCF-7; *Spatholobus littoralis*; Rasio Bax/Bcl-2

ABSTRACT

Name : Bela Hardiyani Basri

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Thesis Title : *The Effect of Red Bajakah Wood Extract (Spatholobus littoralis) on Pro-Apoptotic BAX Protein Levels in MCF-7 Breast Cancer Cells and Its Review from an Islamic Perspective*

The treatment of breast cancer requires effective and safe chemopreventive agents. The use of red bajakah wood extract (Spatholobus littoralis) has been known to inhibit the viability of MCF-7 breast cancer cells and its role in modulating the apoptosis mechanism. This study aims to determine the extent of certainty of the Bax/Bcl-2 protein expression ratio in MCF-7 cells before and after treatment with S. littoralis extract using the IC_{50} concentration through the CCK-8 test. In this study, tamoxifen was used as a positive control and changes in cell morphology were observed microscopically. Bax and Bcl-2 protein levels were measured using the ELISA method, and the Bax/Bcl-2 ratio was determined as an indicator of apoptosis activation. The results of this study showed that Spatholobus littoralis extract at a concentration of 116.4 ppm significantly increased Bax levels ($p < 0.05$) compared to the control. The Bax/Bcl-2 ratio was 4.16, which was not significantly different from the IC_{50} concentration of tamoxifen at 4.8 ppm ($p > 0.05$). This indicates the potential of bajakah wood extract as a chemopreventive agent through the induction of apoptosis in MCF-7 cells.

Keywords: Apoptosis; MCF-7 cells; Spatholobus littoralis; Bax/Bcl-2 ratio