

INTISARI

Tanaman sirih telah terbukti dapat menghambat pertumbuhan sel kanker. Uji aktivitas senyawa yang terkandung pada daun sirih sebagai antikanker telah banyak dilakukan, tetapi belum ada penelitian mengenai aktivitas antikanker daun sirih pada sel kanker kolon. Penelitian ini bertujuan untuk mengetahui aktivitas antikanker dari ekstrak etanol daun sirih (*Piper betle* L.) terhadap sel kanker kolon WiDr dan melihat potensinya dalam menghambat protein siklooksigenase pada kanker kolon.

Efek antikanker dari ekstrak etanol daun sirih diketahui dengan metode 3-[4,5-dimetiltiazol-2-il]-2,5-difenil tetrazolium bromida (MTT) pada kanker kolon WiDr dan dihitung nilai IC₅₀. Uji induksi apoptosis dilakukan dengan metode *double staining* menggunakan etidium bromida-akridin oranye. Selanjutnya, mekanisme molekuler antikanker ekstrak etanol daun sirih diketahui dengan uji ekspresi siklooksigenase menggunakan metode imunositokimia.

Ekstrak etanol daun sirih mempunyai aktivitas sitotoksik dan menginduksi apoptosis dengan nilai IC₅₀ 794,23 µg/mL yang dihitung menggunakan regresi linear *Microsoft Excel 2007*. Hasil Imunositokimia menunjukkan bahwa ekstrak etanol daun sirih menekan ekspresi protein siklooksigenase.

Kata kunci : daun Sirih hijau, sel kanker kolon WiDr, siklooksigenase.

Abstract

Piper betle plant has been proven to inhibit the growth of cancer cells. Activity test of the compounds contained in Piper betle leaf as anticancer has been done a lot, but there has not been research about the anticancer activity of Piper betle leaf extract in colon cancer cells. This study aims to determine the anticancer activity of the ethanol extract of Piper betle against WiDr colon cancer cells and to see the potential in inhibiting cyclooxygenase protein in colon cancer.

Anticancer effects of Piper betle leaf etanol extract was known by the method of 3-[4,5-dimetiltiazol-2-yl]-2.5 diphenyl tetrazolium bromide (MTT) on WiDr colon cancer and IC_{50} value was calculated. Apoptosis induction test was conducted using a double staining method with ethidium bromide-acridine orange. Furthermore, the molecular mechanism of anticancer Piper betle leaf etanol extract was known with the expression test of cyclooxygenase using immunocytochemistry method.

Piper betle leaf extract has cytotoxic activity and induces apoptosis with IC_{50} value is 794.23 mg / mL, calculated using linear regression Microsoft Excel 2007. The result of immunocytochemistry shows that the ethanol extract of Piper betle leaf suppresses expression of cyclooxygenase protein.

Key words: Piper betle leaf, WiDr colon cancer cells, cyclooxygenase.