

INTISARI

Lebuli (*Cajanus cajan*) mengandung flavonoid yang memiliki aktivitas antiproliferatif pada *cancer cell line* manusia MCF-7, COR-L23, C32 dan *normal cell line* SVK-14. Namun, biji lebuli dari Lombok belum banyak dimanfaatkan oleh masyarakat Indonesia. Biji lebuli digunakan dalam formulasi beras analog F30 bersama mocaf, jagung dan rumput laut. Untuk itu, ekstrak etanol biji lebuli, beras analog F30 maupun komposisi lainnya diuji *MTT assay* untuk melihat potensi aktivitas sitotoksiknya terhadap sel kanker kolon WiDr.

Ekstrak etanol dibuat dengan metode maserasi menggunakan etanol 96%. Morfologi dan kepadatan sel setelah perlakuan dengan ekstrak diamati di bawah mikroskop *inverted* dengan perbesaran 100x. Aktivitas sitotoksik ditetapkan dengan *MTT assay* terhadap sel WiDr dan sel normal Vero sebagai pembandingan. Data dianalisis menggunakan regresi linear menghasilkan nilai *inhibition concentration* (IC_{50}) dan *selectivity index* (SI).

Hasil penelitian menunjukkan bahwa ekstrak etanol biji lebuli, beras analog F30 dan jagung memiliki aktivitas penghambatan pertumbuhan terhadap sel WiDr dengan IC_{50} berturut-turut sebesar $398,36 \pm 5,29 \mu\text{g/mL}$, $821,66 \pm 2,80 \mu\text{g/mL}$ dan $838,74 \pm 14,44 \mu\text{g/mL}$. Aktivitas tersebut selektif dengan nilai SI berturut-turut 24.395,93; 160.364,48; 79,02 saat dibandingkan dengan sel Vero. Namun, ekstrak etanol mocaf ($429.155,81 \pm 4,46 \mu\text{g/mL}$) dan rumput laut ($7.969,18 \pm 7,61 \mu\text{g/mL}$) tidak memiliki aktivitas penghambatan pertumbuhan sel WiDr. Biji lebuli dan beras analog F30 memiliki potensi sitotoksik yang selektif terhadap sel kanker kolon.

Kata kunci : Lebuli (*Cajanus cajan*), Beras Analog F30, Sitotoksik, Sel Kanker Kolon WiDr

ABSTRACT

Pigeonpea (*Cajanus cajan*) contains flavonoids that have antiproliferative activity in human cancer cell lines MCF-7, COR-L23, C32 and normal cell line SVK-14. However, pigeonpea seeds from Lombok have not been widely utilized by Indonesian people. Pigeonpea seeds was used in the formulation of analog rice F30 with mocaf, corn and seaweed. Therefore, ethanolic extracts of pigeonpea seeds, analog rice F30 and other compositions tested with MTT assay to see the potential of cytotoxic activity against WiDr colon cancer cell lines.

The ethanolic extract was prepared by maceration method using 96% ethanol. Morphology and cell density after treatment with extracts were observed under an inverted microscope with 100x magnification. Cytotoxic activity was determined by MTT assay against WiDr cell line and normal cell line, Vero as the comparison. Data were analyzed using linear regression yield inhibition concentration (IC_{50}) and selectivity index (SI) values.

The results showed that the ethanolic extract of pigeonpea seeds, analog rice F30 and corn had activity in inhibition of the growth of WiDr cell with their IC_{50} values were $398,36 \pm 5,29 \mu\text{g/mL}$, $821,66 \pm 2,80 \mu\text{g/mL}$ and $838,74 \pm 14,44 \mu\text{g/mL}$, respectively. Their activity were selective with SI value 24,395,93; 160,364.48; 79.02, respectively when compared with Vero cell line. However, the ethanolic extract of mocaf ($429.155,81 \pm 4.46 \mu\text{g/mL}$) and seaweed ($7969.18 \pm 7.61 \mu\text{g/mL}$) did not have activity in inhibition of the growth of WiDr cell. Pigeonpea seeds and analog rice F30 have potential cytotoxic activity that is selective against colon cancer cell.

Keywords: Pigeonpea (*Cajanus cajan*), Analog Rice F30, Cytotoxic, WiDr colon cancer cell line