

ABSTRACT

Background : *Cancer is one of the main death causes in the world. Raji cells comes from Burkitt's Lymphoma cancer especially B lymphocyte. Conventional cancer therapies such as chemotherapy, radiation, surgery and combination has many negative side effects for the patient's body, therefore, cancer therapies with minimum side effects using herbs are still needed. The extract of Andrographis paniculata (Burm. f.) Nees leaves has an andrographolide active compound that work as an anticancer.*

Objective : *The objective of this study is to test the cytotoxicity potency of ethanolic extract of Andrographis paniculata (Burm. f.) Nees towards raji cells.*

Methods : *Cytotoxic test was using MTT assay (Microculture Tetrazolium Salt), absorbances reading using ELISA (Enzyme Linked Immunosorbent Assay) microplate reader with 550 nm wavelength. The type of this study is a pure laboratory in vitro experiment. Raji cells were given the ethanolic extract of Andrographis paniculata (Burm. f.) Nees leaves in a different concentrations which are (0; 3,125; 6,25; 12,5; 25; 50)µg/ml.*

Results : *The result of this study is that the highest potency of ethanolic extract of Andrographis paniculata (Burm. f.) Nees leaves on destroying raji cells in 50µg/ml concentration with cell destroyed was 68,9%. Regression test using SPSS (Statistical Product and Service) shows that ethanolic extract of Andrographis paniculata (Burm. f.) Nees leaves towards raji cells has an IC₅₀ in the amount of 11,60 µg/ml.*

Conclusion : *Ethanolic extract of Andrographis paniculata (Burm. f.) Nees leaves has an in vitro cytotoxicity potency towards raji cells.*

Keywords: *Andrographis paniculata (Burm. f.) Nees, andrographolide, anticancer, raji cells, cytotoxicity, herbal therapy*

INTISARI

Latar belakang : Kanker merupakan salah satu penyebab kematian utama di dunia. Sel raji berasal dari kanker *Burkitt's Lymphoma*, limfosit B. Terapi kanker konvensional seperti kemoterapi, radiasi, pembedahan, dan kombinasi memiliki banyak efek negatif bagi tubuh. Pencarian obat antikanker sebagai terapi herbal yang diharapkan efektif dan memiliki efek samping minimal. Ekstrak daun sambiloto (*Andrographis paniculata* (Burm. f.) Nees) memiliki senyawa aktif *andrographolide* mempunyai potensi sebagai antikanker.

Tujuan Penelitian : Untuk menguji potensi aktivitas sitotoksik ekstrak etanolik daun sambiloto terhadap sel raji.

Metodologi : Jenis penelitian ini adalah penelitian eksperimental laboratoris murni secara *in vitro*. Uji yang dilakukan adalah uji sitotoksitas metode MTT (*Microculture Tetrazolium Salt*), dengan pembacaan absorbansi sel menggunakan ELISA (*Enzyme Linked Immunosorbent Assay*) *microplate reader* dengan panjang gelombang 550 nm. Sel raji diberikan perlakuan dengan berbagai konsentrasi ekstrak etanolik daun sambiloto yaitu sebesar (0; 3,125; 6,25; 12,5; 25; 50) $\mu\text{g/ml}$.

Hasil : Hasil penelitian menunjukkan potensi aktivitas sitotoksik ekstrak etanolik daun sambiloto paling besar pada konsentrasi 50 $\mu\text{g/ml}$ dengan kematian sel sebesar 68,9%. Uji statistik menggunakan uji regresi dengan SPSS (*Statistical Product and Service*) menunjukkan bahwa ekstrak etanolik daun sambiloto terhadap sel raji memiliki kadar IC_{50} sebesar 11,60 $\mu\text{g/ml}$

Kesimpulan : Ekstrak etanolik daun sambiloto mempunyai potensi aktivitas sitotoksik terhadap sel raji secara *in vitro*.

Kata kunci: *Andrographis paniculata* (Burm. f.) Nees, *andrographolide*, antikanker, sel raji, aktivitas sitotoksik, terapi herbal.