Pengaruh enkapsulasi ekstrak herba sambiloto (Andrographis Paniculata Ness) dengan liposom terhadap aktivitas antiproliferasi sel kanker payudara T47D = The effect in encapsulation bitter herbs extract (Andrographis Paniculata Ness) in liposomes against antiproliferative activity of T47D breast cancer cells

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Abstrak

[ABSTRAK
Tanaman sambiloto (Andrographis Paniculata Nees) memiliki banyak manfaat dalam pengobatan, salah satunya sebagai obat antikanker. Liposom merupakan salah satu perkembangan dari sistem penghantaran obat yang telah diteliti dapat digunakan sebagai pembawa obat-obat, protein, dan zat?zat molekuler lain. Penelitian ini bertujuan untuk mengembangkan obat dengan bahan dasar ekstrak herba sambiloto yang dienkapsulasi liposom dan diuji aktivitas antiproliferasinya terhadap sel kanker payudara T47D. Metode yang digunakan dalam pembuatan liposom ini adalah metode hidrasi lapis tipis. Pengecilan ukuran partikel dilakukan dengan cara ekstrusi. Evaluasi yang dilakukan dalam penelitian ini adalah distribusi ukuran partikel dan zeta potensial dengan alat DLS, efisiensi penjerapan dengan alat dialisis, morfologi ukuran dengan alat TEM. Uji antiproliferasi sel kanker menggunakan metode MTT. Hasil yang diperoleh pada TEM yang menggambarkan model liposom OLV dengan ukuran ±50 nm; distribusi ukuran partikel liposom sebesar 452,5 dan 43,82 nm serta zeta potensial sebesar -11,3 mV; efisiensi penjerapan sebesar 61,63 %. IC50 dari liposom ekstrak dan larutan ekstrak berturut-turut adalah 11,997 ppm dan 27,488 ppm. Hasil ini menunjukkan bahwa enkapsulasi ekstrak herba sambiloto dengan liposom memberikan pengaruh terhadap aktivitas antiproliferasi sel kanker payudara T47D.
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<i>ABSTRACT
;A Sambiloto?s Plant (Andrographis paniculata Nees) has many benefits in the medicals treatment, one of them as an anticancer drug. Liposomes are one of the development of drug delivery systems that have been studied can be used as carriers of drugs, proteins, and other molecular substances. This research aims to develop drugs with a basis of extract of bitter herbs are encapsulated with liposomes for comparison their antiproliferation activity against T47D breast cancer cells. The method which used in the manufacture of liposomes is thin layer hydration method. Reduction of particle size liposomes is done by extrusion. Evaluations were performed in this study is the particle size distribution and zeta potential by DLS, entrapment efficiency by dialisis, morphology size by TEM. Antiproliferation cancer cells test using MTT method. Results obtained at the TEM depicting the model OLV liposomes with a size of about ±50 nm; liposome particle size distribution of 441 and 45.3 nm, and zeta potential of -11.3 mV; The entrapment efficiency of 61.69%. Showed IC50 of liposomes extract and extract solution are respectively 11,997 ppm and 27,488 ppm. This result showed that the extract of bitter herbs encapsulation with liposomes give effect to the antiploriferative activity of T47D breast cancer cells.
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