Cytotoxic assay of endophytic fungus 1.2.11 secondary metabolites from Brucea javanica (L) Merr towards cancer cell in vitro

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Abstrak

Telah dilakukan uji sitotoksik metabolit sekunder kapang endofit 1.2.11 tanaman Brucea javanica (L.) Merr. Sampel tanaman diambil dari Cianjur, bagian tanaman yang digunakan adalah buah. Uji sitotoksik dilakukan terhadap sel Ruji, NS-l, sel HeLa dan sel Vero. Pengamatan dilakukan selama 24 jam dan 48 jam dengan menghitung sel ludup menggunakan metode tripan biru. Penghitungan l CM dilakukan secara aritmatikal dengan rumus Ricd and Muench. Untuk melihat mekanisme kerja pada proses sitotoksik dilakukan teknik pengecatan DNA menggunakan etidium bromida dan acridine orange. Dari penelitian ini diperoleh lCft) terhadap sel Raji 58,35 fjg/ml, 88,39yg/ml; IC50sel NS-1 162,09 pg/ml, 66,24 p. g/ml; IC^ sel HeLa 361,21 pg/ml, 219,97 pg/ml. IC^sel Vero 1075.18 ug/ml, 656,82 ng/ml. Pengamatan dilakukan dalam waktu 24 jam dan 48 jam. Mekanisme kerja dari metabolit sekunder kapang endofit 1.2. 11 terhadap sel NS-1 cenderung melalui mekanisme apoptosis. (Med J Indones 2006; 15:137-44)
<hr>Cytotoxic assay of secondary metabolite endophytic fungus 1.2.11 from Brucea javanica (L.) Merr has been carried out. Brucea Javanica fruit collected from Cianjur was used in this experiment. Cytotoxic assay was done on Raji, NS-1, HeLa and Vero cells. The observation was done for 24 hours and also for 48 hours. I CM was calculated using the Rich and Muench theory. To observe the working mechanism ofcytotoxic process, DNA staining with etidium bromide and acridine orange was conducted. The cytotoxic assay of endophytic fungi 1.2.11 showed an ICft) of 58.35p.g/ml, 88.39 pg/ml on Raji ceil; 162.09 pg/ml, 66.24 pg/ml on NS cell; 361.21 fjg/ml, 219.97 fjg/ml on HelM cell; and lastly 1075.18 fjg/ml, 656.82 /jg/ml on Vero cell after 24 and 48 hour incubation respectively. The results of this study showed that secondary metabolite of endophytic fungus 1.2.11 has selective cytotoxic effect towards cancer cell and also showed that it might cause apoptosis in NS-1 cell. (Med J Indones 2006; 15:137-44)