

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

Pratiwi Pudjilestari Sudarmono, author

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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 Raji, NS-1, sel HeLa dan sel Vero. Pengamatan dilakukan selama 24 jam dan 48 jam dengan menghitung sel ludup menggunakan metode tripan biru. Penghitungan ICM dilakukan secara aritmatikal dengan rumus Rich and Muench. Untuk melihat mekanisme kerja pada proses sitotoksik dilakukan teknik pengecatan DNA menggunakan etidium bromida dan acridine orange. Dari penelitian ini diperoleh IC₅₀ terhadap sel Raji 58,35 f_g/ml, 88,39_g/ml; IC₅₀ sel 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)

*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. ICM was calculated using the Rich and Muench theory. To observe the working mechanism of cytotoxic process, DNA staining with etidium bromide and acridine orange was conducted. The cytotoxic assay of endophytic fungi 1.2.11 showed an IC₅₀ of 58.35p.g/ml, 88.39 pg/ml on Raji cell; 162.09 pg/ml, 66.24 pg/ml on NS cell; 361.21 f_g/ml, 219.97 f_g/ml on HeLa cell; and lastly 1075.18 f_g/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)*