Pengaruh Ekstrak Etanol Uncaria Gambir (Hunter) Roxb. terhadap viabilitas galur sel HepG2: Fokus terhadap ekspresi Sitoglobin, Nrf2 dan PDGFA = Effect of Uncaria gambir (Hunter) Roxb. ethanol extract on the viability of HepG2 cell line: Focus on cytoglobin, Nrf2, and PDGFA expressions

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Abstrak

Karsinoma hepatoseluler (HCC) merupakan masalah kesehatan global dengan tatalaksana yang belum optimal. Gambir adalah tanaman spesifik Indonesia, yang mengandung flavonoid, dan digunakan sebagai antikanker. Pada patogenesis HCC terjadi disregulasi CYGB, Nrf2, dan PDGFA. Jusman dkk mendapatkan bahwa senyawa dalam gambir dapat berikatan dengan PDGFA. Penelitian ini digunakan ekstrak etanol gambir (EG), dan bertujuan untuk menilai pengaruh EG terhadap viabilitas galur sel HepG2, dan ekspresi dari protein CYGB, Nrf2, dan PDGFA. Optimasi konsentrasi DMSO sebagai pelarut EG, dan konsentrasi EG pada HepG2 (IC50) dianalisis dengan uji MTT. Sel HepG2 diisolasi proteinnya dan ekspresi CYGB, Nrf2, dan PDGFA menggunakan ELISA. Analisis proliferasi sel HepG2 dengan uji BrdU. Hasil dari analisis viabilitas, proliferasi, dan ELISA dari kelompok kontrol dan perlakuan dibandingkan secara statistik. Hasil menunjukan pemberian EG konsentrasi 500; 1000; dan 2000 Î¼g/mL menyebabkan penurunan viabilitas sel, proliferasi sel, serta penurunan ekspresi protein CYGB, Nrf2, dan PDGFA. Disimpulkan pemberian EG menurunkan viabilitas, dan proliferasi sel HepG2 serta terbukti menurunkan ekspresi CYGB, Nrf2, dan PDGFA.

.....epatocellular carcinoma (HCC) is a global health problem with treatment has not provided optimal results. Gambir is an Indonesian specific plant, which contains flavonoids, and is used as an anticancer. In the pathogenesis of HCC dysregulation of Nrf2, CYGB, and PDGFA occurs. Jusman et al found that compounds in gambir can bind to PDGFA. This study used gambir ethanol extract (EG), and aimed to assess the effect of EG on HepG2 cell proliferation, as well as the expression of CYGB, Nrf2, and PDGFA. Optimization of DMSO concentration as EG solvent, and EG concentration in HepG2 (IC50) were analyzed by MTT test. Protein of HepG2 were isolated and expression of CYGB, Nrf2 and PDGFA used ELISA. Analysis of HepG2 cell proliferation with BrdU assay. Results from viability, proliferation, and ELISA analyses of the control and treatment groups were compared statistically. The results showed the administration of EG concentration 500; 1000; and 2000 Î¼g/mL led to decreased cell viability, cell proliferation, and decreased expression of CYGB, Nrf2, and PDGFA proteins. It was concluded that EG administration decreased the viability, and proliferation of HepG2 cells and was shown to decrease the expression of CYGB, Nrf2, and PDGFA.