Analisis sitotoksisitas ekstrak etanol temulawak (Curcuma xanthorrhiza roxb.) terhadap sel fibroblast gingiva menggunakan live/dead staining (in vitro) = Cytotoxicity analysis of ethanol turmeric extract (Curcuma xanthorrhiza roxb.) againts gingival fibrobrast using live/dead staining (in vitro)

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Abstrak

Latar Belakang: Obat antifungal sintetik dilaporkan menimbulkan reaksi gastrointestinal. Ekstrak etanol temulawak merupakan tanaman obat yang memiliki efikasi sebagai antijamur. Untuk dijadikan obat alternatif, ekstrak etanol temulawak harus biokompatibel terhadap sel inang. Tujuan: Menganalisis efek sitotoksitas ekstrak etanol temulawak terhadap sel fibroblast gingiva secara in vitro dengan live/dead staining. Metode: Sel fibroblast gingiva passage kedua dikultur sebanyak 1,4 x 104 sel/wells di atas cover glass dalam 12 wells plate. Sel diberi perlakuan dengan konsentrasi ekstrak etanol temulawak 5% dan 20% dengan waktu paparan 1 jam, 3 jam, dan 24 jam. Viabilitas dilihat dari uji live/dead staining menggunakan confocal laser scanning microscope dengan fluorescent dye SYTO9 ex/em max: 480/500nm, PI ex/em max: 490/635nm. Hasil: intensitas fluorescent semakin tinggi berbanding lurus dengan peningkatan konsentrasi ekstrak etanol temulawak. Kesimpulan: ekstrak etanol temulawak memiliki efek sitotoksik pada konsentrasi 5% dan 20% pada sel fibroblast gingiva.

.....Background: Synthetic antifungal drugs are reported to cause gastrointestinal reactions. Ethanol turmeric extract is a herbal drug that has antifungal efficacy. To be used as an alternative drug, ethanol turmeric extract must be biocompatible with host cells. Objective: Analyze the cytotoxicity of ethanol turmeric extract on gingival fibroblasts in vitro with live/dead staining. Methods: The second passage gingival fibroblast cell was cultured as much as 1.4 x 104 cells / wells on the cover glass in 12 well plates. Cells were treated with ethanol turmeric extract concentrations of 5% and 20% with exposure time of 1 hour, 3 hours and 24 hours. Viability seen from live/dead staining assay using confocal laser scanning microscope with fluorescent dye SYTO9 ex/em max: 480/500nm, PI ex/em max: 490/635nm. Results: The higher fluorescent intensity is linear to increase in concentration of dilution ethanol turmeric extract. Conclusion: Ethanol turmeric extract has a cytotoxic effect at concentrations of 5% and 20% on gingival fibroblast cells.<i/>