Eksplorasi Kemampuan Daya Hambat Propolis Lombok terhadap Candida albicans secara In Vitro = In Vitro Exploration of Lombok Propolis Inhibition Ability Against Candida albicans

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Abstrak

Latar belakang: Infeksi jamur oportunistik oleh Candida sp,. di dunia terus bertambah setiap tahunnya. Candida albicans menjadi jamur dengan tingkat infeksi kandidiasis paling banyak. Penggunaan antibiotik spektrum luas dan kateter urin dalam waktu lama menyebabkan obat standar seperti flukonazol mayoritas menjadi resisten terhadap kandidiasis. Propolis ternyata memiliki senyawa bioaktif yang mampu menghambat pertumbuhan Candida albicans. Propolis Lombok memiliki zat aktif senyawa fenolik seperti flavonoid yang berperan sebagai antijamur. Penelitian ini bertujuan untuk membandingkan efektivitas propolis Lombok dengan flukonazol, serta membandingkan metode well diffusion dengan microbroth dilution. Metode: Penelitian secara in vitro ini menggunakan design penelitian eksperimental yaitu metode well diffusion dan microbroth dilution. Perlakuan dibagi menjadi kelompok kontrol positif: flukonazol, kelompok kontrol negatif: DMSO, serta tiga kelompok propolis dengan kadar 50mg/mL, 70mg/mL, dan 100mg/mL. Setiap prosedur diulang 3 kali. Data dianalisis menggunakan uji statistik Kruskal-walis dan One Way ANOVA. Hasil: Pemberian propolis Lombok menunjukkan zona hambatan dengan rentang rata-rata 7,9 mm–10 mm pada metode agar difusi, sedangkan menunjukkan zona hambatan rata–rata sebesar 15 mm ($p < 0,05$). Jika dibandingkan dengan metode microbroth dilution ditemukan hasil yang serupa. Pada analisis statistik tidak ditemukan adanya perbedaan bermakna di antara ketiga konsentrasi propolis Lombok ($p > 0,05$). Kesimpulan: Propolis Lombok memiliki efek antijamur terhadap pertumbuhan Candida albicans berdasarkan dua metode yang sudah digunakan, namun efektivitasnya masih lebih rendah dibandingkan flukonazol.

.....Introduction: Opportunistic fungal infection by Candida sp,. in the world continues to grow every year. Candida albicans is the fungus with the highest candidiasis infection rate. The use of broad-spectrum antibiotics and urinary catheters for a long time have caused most of the standard drugs such as fluconazole to become resistant to candidiasis. Propolis turns out to have bioactive compounds that can inhibit the growth of Candida albicans. Lombok propolis has active phenolic compounds such as flavonoids which act as antifungals. This study aims to compare the effectiveness of Lombok propolis with fluconazole, and to compare the well diffusion method with micro broth dilution. Method: This in vitro study used an experimental research design, namely the well diffusion and microbroth dilution methods. The treatment was divided into a positive control group: fluconazole, a negative control group: DMSO, and three groups of propolis with levels of 50mg/mL, 70mg/mL, and 100,g/mL. Each procedure was repeated 3 times. Data were analyzed using the Kruskal-Wallis statistical test and One-Way ANOVA. Result: The provision of propolis in Lombok showed an inhibition zone with an average range of 7.9 mm–10 mm on the agar diffusion method, while the inhibition zone showed an average of 15 mm ($p < 0.05$). When compared with the microbroth dilution method, similar results were found. Statistical analysis did not find any significant difference between the three concentrations of Lombok propolis ($p > 0.05$). Conclusion: Lombok propolis has antifungal effect on the growth of Candida albicans based on two methods that have been used, but its

effectiveness is still lower than fluconazole.