Uji antijamur candida dan penetapan kadar flavonoid dan fenol pada ekstrak etanol 70% bunga dan biji Ketepeng Cina (Senna alata L.) = Antifungal activities against candida and total flavonoid and phenolic content in 70% ethanolic extract of Senna alata L. flower and seed

Dinda Shabira Anjani, author

Abstrak

Candida spp. Adalah spesies jamur patogen oportunistik pada manusia yang dapat menyebabkan infeksi superfisial maupun sistemik. Dari seluruh spesies Candida spp., Candida albicans merupakan isolat yang paling sering ditemukan dan bertanggung jawab terhadap 70% infeksi jamur dunia. Sedangkan, Candida krusei memiliki resiko infeksi tinggi pada pasien dengan imunodefisiensi. Terapi lini pertama bagi infeksi kandidiasis adalah flukonazol, akan tetapi pemakaian jangka panjang dapat menimbulkan resistensi. Agen standar lain dalam penanganan kandidasis adalah amfoterisin B, namun memiliki efek samping terhadap fungsi ginjal. Oleh karena itu, perlu dilakukan penelitian untuk mencari tanaman yang memiliki aktivitas antijamur sehingga dapat dimanfaatkan untuk menangangani infeksi C. albicans dan C.krusei. Tanaman ketepeng cina (Senna alata L.) sudah banyak dimanfaatkan sejak dahulu sebagai pengobatan antijamur tradisional. Akan tetapi, penelitian terhadap aktivitas antijamur bagian bunga dan bijinya belum banyak dieskplorasi. Penelitian ini bertujuan untuk mengetahui aktivitas antijamur ekstrak etanol 70% bunga dan biji ketepeng cina (Senna alata L.) terhadap jamur Candida albicans dan Candida krusei, dan untuk memperoleh kadan fenol dan flavonoid total ekstrak. Ekstraksi dilakukan dengan metode ultrasound-assissted extraction (UAE). Uji antijamur dilakukan dengan metode difusi sumuran agar dan mikrodilusi. Penetapan kadar dilakukan dengan spektofotometri UV-VIS dimana penetapan kadar fenol total menggunakan pereaksi Folin-Ciocalteu dan penetapan kadar flavonoid total menggunakan pereaksi AlCl3. Hasil uji antijamur menunjukkan bahwa pada konsentrasi 6.250 g/mL - 100.000 g/mL ekstral etanol 70% bunga dan biji ketepeng cina (Senna alata L.) tidak menunjukkan adanya aktivitas antijamur terhadap C. albicans dan C. krusei. Hasil penetapan kadar fenol total pada ekstrak etanol 70% bunga ketepeng cina sebesar 80,09 ± 0,088 mgEAG/gr sedangkan pada biji sebesar 8,99 ± 0,099 mgEAG/gr. Hasil penetapan kadar flavonoid total ekstrak etanol 70% bunga ketepeng cina sebesar 27,95 ± 0,26 mgEK/gr sedangkan pada biji sebesar 1,93 ± 0,02 mgEK/gr.

.....Candida spp. is an opportunistic pathogen fungi species that can cause supercial or systemic infections. From all Candida spp. species, Candida albicans is the most common isolate and is responsible for 70% of the world's fungal infections. On the other hand, Candida krusei posses a high infection rate for patient with immunodeficiency. The first-line therapy for candidiasis infection is fluconazole, but long-term use can cause resistance. Another standard agent that is used in the treatment of candidiasis is amphotericin B, but it has side effects on kidney function. Therefore, it is necessary to conduct research in order to find plants that have antifungal activity so that they can be used to treat C. albicans and C. krusei infections. Candle bush (Senna alata L.) has been used for a long time as a traditional antifungal treatment. However, research on the antifungal activity of flowers and seeds part of candle bush has not been widely explored. This study aimed to determine the antifungal activity of the 70% ethanolic extract of flowers and seeds of candle bush (Senna alata L.) against Candida albicans and Candida krusei, and also to obtain the total phenol and flavonoid

content of the extract. Extraction was carried out using the ultrasound-assisted extraction (UAE) method. The antifungal test was conducted by agar-well diffusion and microdilution methods. The assay was carried out by UV-VIS spectrophotometry in which the determination of the total phenol content uses the Folin-Ciocalteu reagent and the determination of the total flavonoid content uses the AlCl3 reagent. The antifungal test results showed that at a concentration of 6.250 g/mL - 100.000 g/mL 70% ethanol extract of candle bush (Senna alata L.) flowers and seeds did not show any antifungal activity against C. albicans and C. krusei. The results of the determination of total phenol content in the 70% ethanol extract of candle bush flowers were 80.09 ± 0.088 mgEAG/gr, while the seeds were 8.99 ± 0.099 mgEAG/gr. The results of the determination of total flavonoid content of the 70% ethanol extract of candle bush flower were 27.95 ± 0.26 mgEK/gr while in the seeds it was 1.93 ± 0.02 mgEK/gr.