

ABSTRAK

Aktivitas Antifungi Senyawa 1,3,5,7-tetrahidroksiantrakuinon Hasil Sintesis Terhadap *Candida albicans*, *Malassezia furfur*, dan *Pityrosporum ovale*

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Latar Belakang: Fungi patogen dapat menyebabkan resistensi terhadap obat antifungi akibat adanya penyakit infeksi fungi. Pengembangan senyawa alternatif yang memiliki sifat antifungi diperlukan untuk menangani resistensi fungi. Senyawa 1,3,5,7-tetrahidroksiantrakuinon merupakan senyawa turunan antrakuinon yang telah diteliti memiliki aktivitas antibakteri tetapi belum diketahui aktivitasnya terhadap fungi. Tujuan penelitian ini untuk mengetahui adanya sifat antifungi senyawa 1,3,5,7-tetrahidroksiantrakuinon terhadap beberapa fungi patogen.

Metodologi: Penelitian ini merupakan penelitian eksperimental yang meliputi sintesis senyawa turunan antrakuinon (1,3,5,7-tetrahidroksiantrakuinon) yang dilakukan dengan *me-reflux* 0,9 gr asam 3,5-dihidroksibenzoat dan asam sulfat pekat selama 2 jam dalam suhu 120 °C. Senyawa produk diidentifikasi menggunakan KLT dan Spektroskopi NMR. Uji aktivitas antifungi dilakukan dengan metode uji difusi padat.

Hasil Penelitian: Sebanyak 0,817 gr senyawa 1,3,5,7-tetrahidroksiantrakuinon diperoleh dari proses sintesis dengan nilai rendemen 92%. Nilai zona diameter hambat terhadap *C. albicans*, *M. furfur*, dan *P. ovale* secara berurutan adalah 2,89-8,67; 0,89-3,11; dan 1,55-6 mm.

Kesimpulan: Senyawa turunan antrakuinon (1,3,5,7-tetrahidroksiantrakuinon) memiliki aktivitas menghambat fungi terhadap *C. albicans*, *M. furfur*, dan *P. ovale* dengan kategori resisten.

Kata Kunci: Antrakuinon, 1,3,5,7-tetrahidroksiantrakuinon, antifungi, *C. albicans*, *M. furfur*, *P. ovale*

ABSTRACT

Antifungal activity of anthraquinone derivative compound 1,3,5,7-tetrahydroxy anthraquinone from synthesis results toward *Candida albicans*, *Malassezia furfur*, and *Pityrosporum ovale*

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Background: Pathogenic fungi are able to lead antifungal resistance because the existence of fungal infectious disease. The development of alternative compounds that have an antifungal properties is needed to handle fungus resistance. 1,3,5,7-tetrahydroxyanthraquinone is anthraquinone derivative which has been studied has antibacterial activity but not yet known its activity to fungi. The purpose of this study was to determine the antifungal properties of 1,3,5,7-tetrahydroxy anthraquinone to some pathogenic fungi.

Methods: This was an experimental research which include sintesist of anthraquinone derivative (1,3,5,7-tetrahydroxyanthraquinone) was performed by refluxing 0,9 gr 3,5-dihydroxybenzoic acid and concentrated sulfuric acid for 2 hours on 120 °C. The product compound is identified with TLC and NMR. Antifungal activity test is performed with disk diffusion method.

Result: A total of 0,817 gr of the compound 1,3,5,7-tetrahydroxyanthraquinone was obtained from the synthesis procces with a yield value of 92%. The value of inhibitory diameter zone to *C. albicans*, *M. furfur*, and *P. ovale* consecutively was 2,89-8,67; 0,89-3,11; and 1,55-6 mm.

Conclusion: The anthraquinone derivative compound (1,3,5,7-tetrahydroxy anthraquinone) has fungal inhibitory activity against *C. albicans*, *M. furfur*, and *P. ovale* in resistant category.

Keywords: Anthraquinone, 1,3,5,7-tetrahydroxyanthraquinone, antifungal, *C. albicans*, *M. furfur*, *P. ovale*