ABSTRAK

DWI TRISKA OLIFIYANA, 2024, UJI AKTIVITAS ANTIOKSIDANMETABOLIT SEKUNDER BAKTERI ENDOFIT YANG DIISOLASI DARI BUNGA PUKUL EMPAT (*Mirabilis jalapa* L.), PROGRAM STUDI S1 FARMASI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA, **dibimbing oleh dr. Iswandi, M.Farm., Apt. dan Desi Purwaningsih, M.Si**

Bakteri endofit yang hidup didalam jaringan tanaman mampu menghasilkan senyawa metabolit sekunder yang sama dengan tanaman inangnya. Pemanfaatan bakteri endofit sebagai penghasil senyawa metabolit sekunder sangat menguntungkan dalam pengujian antioksidan. Penelitian ini bertujuan untuk mengisolasi bakteri endofit dalam memproduksi senyawa aktif antioksidan dilihat dari nilai % Inhibisi, IC_{50} dan AAI.

Metode isolasi endofit dilakukan pemilihan koloni tunggal menggunakanmetode gores. Karakteristik bakteri hasil fermentasi media NA miring dan BHIcair diamati secara makroskopis, mikroskopis, dan uji biokimia, kemudian pengujian antioksidan dengan metode DPPH menggunakan spektrofotometer UV-Vis dengan panjang gelombang 516 nm.

Penelitian ini diambil 3 isolat endofit murni. Identifikasi semua bakteri secara mikroskopis menunjukkan Gram + yang tergolong *basillus s.p*. Hasil ujiDPPH didapatkan nilai rata-rata IC_{50} kontrol + 16,73ppm tergolong sangat kuat,MJ.1 yaitu 80,99ppm tergolong kuat, MJ.4 yaitu 105,68ppm dan MJ.6 yaitu 108,99ppm tergolong sedang. Maka dapat disimpulkan bahwa MJ.1 memiliki potensi aktifitas antioksidan yang kuat dan mendekati kontrol + dibandingkan dengan MJ.4 dan MJ.6.

Kata kunci : *Mirabilis jalapa* L., Antioksidan, DPPH, Endofit.

ABSTRACT

DWI TRISKA OLIFIYANA, 2024, TEST OF ANTIOXIDANT ACTIVITYOF SECONDARY METABOLITES OF ENDOPHYTE BACTERIA ISOLATED FROM FOUR O'CLOCK FLOWERS (Mirabilis jalapa L.), UNDERGRADUATE STUDY PROGRAM OF PHARMACY, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA, supervised by Dr. Iswandi, M. Farm., Apt. and Desi Purwaningsih, M.Sc

Endophytic bacteria that live in plant tissue are able to produce the samesecondary metabolite compounds as their host plants. The use of endophytic bacteria as producers of secondary metabolite compounds is very beneficial in antioxidant testing. This research aims to isolate endophytic bacteria in producing active antioxidant compounds seen from the % Inhibition, IC50 andAAI values.

The endophyte isolation method is carried out by selecting single colonies using the scratch method. The characteristics of the bacteria resulting from fermentation in slanted NA media and liquid BHI were observed macroscopically, microscopically and in biochemical tests, then antioxidant testing was carried out using the DPPH method using a UV-Vis spectrophotometer with a wavelength of 516 nm.

This research took 3 pure endophyte isolates. Identification of all bacteria microscopically showed Gram + which was classified as bacillus s.p. The DPPH test results showed that the average control IC50 value was + 16.73ppm which was classified as very strong, MJ.1 which was 80.99ppm which was classified as strong, MJ.4 which was 105.68ppm and MJ.6 which was 108.99ppm which was classified as moderate. So it can be concluded that MJ.1 has the potential for strong antioxidant activity and is close to control + compared to MJ.4 and MJ.6.

Key words : Mirabilis jalapa L., Antioxidants, DPPH, Endophytes.