

ABSTRAK

Nama : Jihana Dwi Anisa
Program Studi : Farmasi
Judul : Produksi Metabolit Sekunder Kapang Endofit PLC5 Menggunakan Media Alternatif Ekstrak Ubi Kayu (*Manihot esculenta* Crantz) Dan Uji Antibakteri Terhadap *Bacillus subtilis* dan *Pseudomonas aeruginosa*.

Kapang endofit PLC5 merupakan mikroba endofit yang tumbuh dalam tanaman inang *Lannea coromandelica*. Pertumbuhan kapang endofit PLC5 menggunakan media alternatif ekstrak ubi kayu. Pada pertumbuhan kapang endofit PLC5 didapatkan fase stasioner selama 18 hari dan dilakukan proses fermentasi. Hasil proses fermentasi dipisahkan menjadi 2 bagian yaitu biomassa dan supernatan. Biomassa diekstraksi menggunakan pelarut metanol, supernatan diekstraksi menggunakan pelarut etil asetat hingga diperoleh larutan jernih yang kemudian dipekatkan dengan *vacuum rotary evaporator* untuk diperoleh ekstrak biomassa dan supernatan kapang endofit PLC5. Ekstrak biomassa dan supernatan dilakukan uji skrining senyawa metabolit sekunder. Pada ekstrak biomassa positif mengandung senyawa metabolit sekunder saponin, flavonoid, alkaloid dan tanin. Pada ekstrak supernatan positif mengandung senyawa metabolit sekunder flavonoid dan tanin. Kandungan senyawa metabolit sekunder kapang endofit PLC5 berperan aktif dalam menghambat pertumbuhan bakteri *Bacillus subtilis* dan *Pseudomonas aeruginosa*. Pada bakteri *Bacillus subtilis* ekstrak biomassa kapang endofit PLC5 menghasilkan zona hambat sebesar 11,42 mm dan ekstrak supernatan menghasilkan zona hambat sebesar 13,82 mm. Pada bakteri *Pseudomonas aeruginosa* ekstrak biomassa menghasilkan zona hambat 9,82 mm dan ekstrak supernatan menghasilkan zona hambat 16,12 mm.

Kata kunci:

Kapang endofit, ubi kayu, metabolit sekunder, *Bacillus subtilis*, *Pseudomonas aeruginosa*

ABSTRACT

Name : Jihana Dwi Anisa
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Title : Secondary Metabolite Production of PLC5 Endophytic Molds Using Alternative Media of Cassava Meat Extract (*Manihot esculenta* Crantz) and Antibacterial Test on *Bacillus subtilis* and *Pseudomonas aeruginosa* Bacteria.

PLC5 endophytic molds are endophytic microbia that grow in host plants *Lannea coromandelica*. The growth of PLC5 endophytic molds uses alternative cassava extract media. In the growth of PLC5 endophytic molds the stationary phase was obtained for 18 days and carried out the fermentation process. The results of the fermentation process are separated into 2 parts, namely biomass and supernatant. Biomass was extracted using methanol solvent, the supernatant was extracted using ethyl acetate solvents to obtain clear solutions which were then concentrated with a vacuum rotary evaporator to obtain endophytic mold mold biomass and supernatant extract. Biomass and supernatant extracts were screened for secondary metabolites. Positive biomass extracts contain secondary metabolites of saponins, flavonoids, alkaloid and tannins. The supernatant extract positively contains secondary metabolites of flavonoids and tannins. Content of secondary metabolite compounds PLC5 endophytic molds play an active role in inhibiting the growth of *Bacillus subtilis* and *Pseudomonas aeruginosa* bacteria. In *Bacillus subtilis* bacteria, PLC5 endophytic mold biomass extract produced a inhibition zone of 11.42 mm and supernatant extract produced a inhibition zone of 13.82 mm. In *Pseudomonas aeruginosa* bacteria, biomass extract produced a 9.82 mm inhibition zone and supernatant extract produced a inhibition zone of 16.12 mm.

Keyword:

Endophytic fungi, cassava, secondary metabolites, *Bacillus subtilis*, *Pseudomonas aeruginosa*