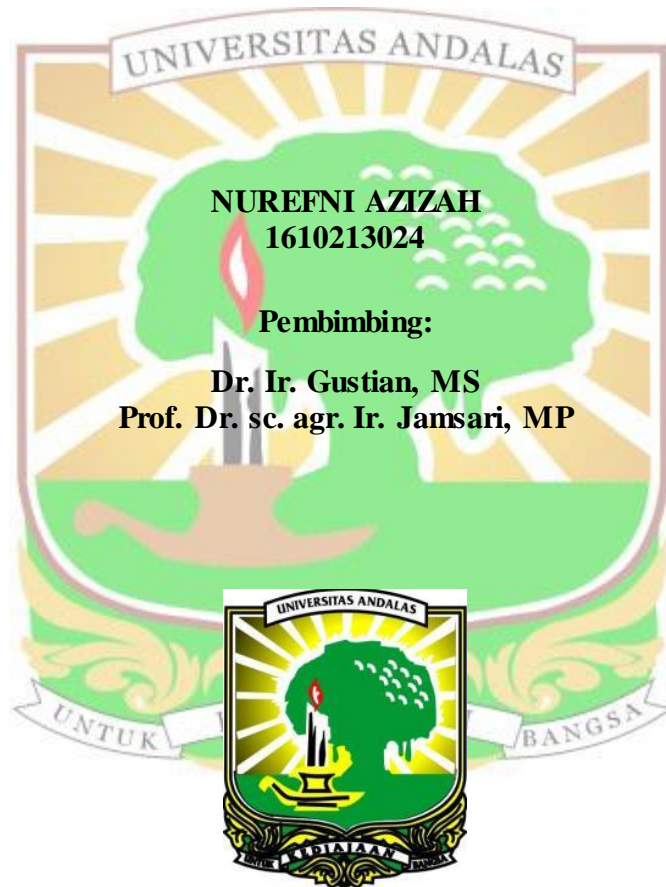


**RESPONS LEVEL EKSPRESI GEN *OocE* DAN *OocO*  
PADA *Serratia plymuthica* UBCF\_13 TERHADAP KEHADIRAN  
JAMUR *Colletotrichum gloeosporioides***

**SKRIPSI**

**OLEH :**



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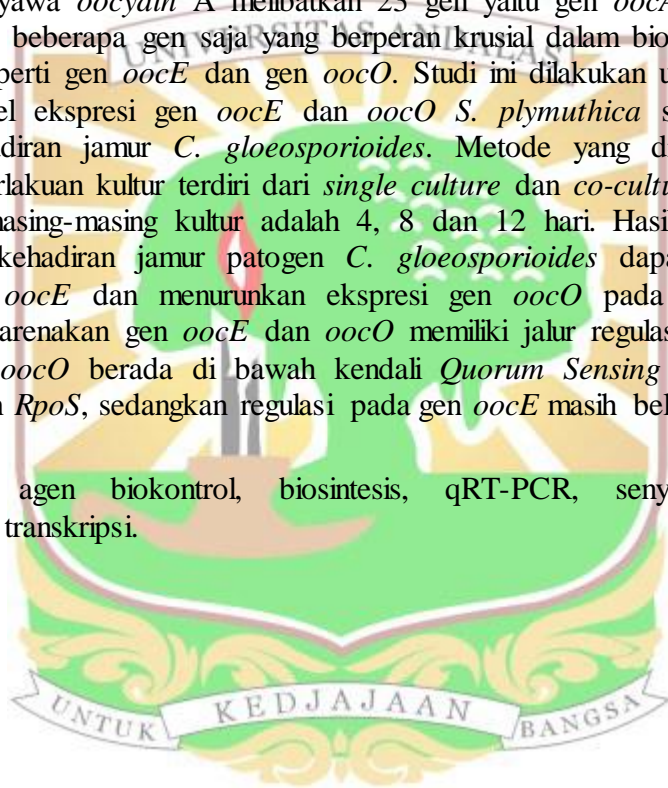
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# RESPONS LEVEL EKSPRESI GEN *OocE* DAN *OocO* PADA *Serratia plymuthica* UBCF\_13 TERHADAP KEHADIRAN JAMUR *Colletotrichum gloeosporioides*

## Abstrak

Bakteri *S. plymuthica* strain UBCF\_13 merupakan agen biokontrol yang berpotensi menghambat jamur patogen *C. gloeosporioides*. *S. plymuthica* dengan menghasilkan beberapa senyawa antijamur, salah satunya adalah *oocydin A*. Biosintesis senyawa *oocydin A* melibatkan 23 gen yaitu gen *oocA* sampai *oocW*. Namun, hanya beberapa gen saja yang berperan krusial dalam biosintesis senyawa *oocydin A* seperti gen *oocE* dan gen *oocO*. Studi ini dilakukan untuk mengetahui perubahan level ekspresi gen *oocE* dan *oocO* *S. plymuthica* strain UBCF\_13 terhadap kehadiran jamur *C. gloeosporioides*. Metode yang digunakan adalah qRT-PCR. Perlakuan kultur terdiri dari *single culture* dan *co-culture* dengan umur bakteri dari masing-masing kultur adalah 4, 8 dan 12 hari. Hasil yang diperoleh menunjukkan kehadiran jamur patogen *C. gloeosporioides* dapat meningkatkan ekspresi gen *oocE* dan menurunkan ekspresi gen *oocO* pada *S. plymuthica* UBCF\_13 dikarenakan gen *oocE* dan *oocO* memiliki jalur regulasi yang berbeda. Ekspresi gen *oocO* berada di bawah kendali *Quorum Sensing* dan regulasinya diatur oleh gen *RpoS*, sedangkan regulasi pada gen *oocE* masih belum diketahui.

Kata kunci: agen biokontrol, biosintesis, qRT-PCR, senyawa antijamur, transkripsi.



# RESPONSE OF *OocE* AND *OocO* GENE EXPRESSION LEVELS IN *Serratia plymuthica* UBCF\_13 TO THE PRESENCE OF PATHOGENIC FUNGUS *Colletotrichum gloeosporioides*

## Abstract

The bacterium *Serratia plymuthica* strain UBCF\_13 is a biocontrol agent that has the potential to inhibit the pathogenic fungus *C. gloeosporioides*. *S. plymuthica* producing several antifungal compounds, such as oocydin A. The biosynthesis of oocydin A involves 23 genes, namely *oocA* to *oocW* genes. However, only a few genes play a crucial role in the biosynthesis of oocydin A, such as *oocE* and *oocO* genes. This study was conducted to determine the changes in the expression levels of the *oocE* and *oocO* genes of *S. plymuthica* strain UBCF\_13 against the presence of *C. gloeosporioides*. The method used is qRT-PCR. The culture treatment consisted of single culture and co-culture with the age of bacteria from each culture was 4, 8 and 12 days. The results showed that the presence of the pathogenic fungus *C. gloeosporioides* could increase the expression of the *oocE* gene and decrease the expression of the *oocO* gene in *S. plymuthica* UBCF\_13 because the *oocE* and *oocO* genes have different regulatory pathways. The expression of the *oocO* gene is under the control of Quorum Sensing and its regulation is regulated by the *RpoS* gene, while the regulation of the *oocE* gene is still unknown.

Keywords: biocontrol agent, biosynthesis, qRT-PCR, antifungal compound, transcription.

