

## INTISARI

**WULANDARI, L., 2019, PENAPISAN BAKTERI PENGHASIL ENZIM SUPEROKSIDA DISMUTASE (SOD) DARI TANAH HUTAN MANGROVE MARON EDUPARK SEMARANG. SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.**

Enzim Superoksida Dismutase (SOD) dikenal sebagai antioksidan yang mampu meminimalisir kerusakan jaringan akibat radikal bebas. SOD dapat dihasilkan dari bakteri pada tanah hutan mangrove. Penelitian ini bertujuan mengisolasi dan mengetahui isolat yang menghasilkan aktivitas SOD, serta mengukur aktivitas SOD tertinggi dan identifikasi isolat bahwa penghasil SOD tertinggi.

Sampel yang digunakan yaitu 5 isolat bakteri yang telah dipilih berdasarkan karakter yang berbeda secara makroskopis. Kelima isolat bakteri diuji aktivitas antioksidan dengan SOD *assay kit* WST-1 dan menghasilkan nilai persentase inhibisi reduksi. Aktivitas SOD tertinggi ditunjukkan dengan persentase inhibisi yang besar, selanjutnya dilakukan identifikasi.

Hasil persen inhibisi menunjukkan semua isolat bakteri memiliki aktivitas SOD dimana aktivitas SOD tertinggi yaitu THM1 dengan nilai persen inhibisi 74,51%. Sampel THM1 diuji secara konvensional dengan hasil Gram positif. Uji molekuler dengan PCR 16S rDNA menunjukkan identitas isolat THM1 yakni *Bacillus altitudinis* dengan homologi 99%. Berdasarkan pencarian dengan program UniProt terbukti terdaftar SOD jenis Cu-Zn SOD.

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Kata kunci: radikal bebas, bakteri, mangrove, SOD

## **ABSTRACT**

**WULANDARI, L., 2019, SCREENING BACTERIA PRODUCING ENZYME SUPEROXIDE DISMUTASE (SOD) MANGROVE FOREST LAND OF MARON EDUPARK SEMARANG. ESSAY, FACULTY OF PHARMACY OF UNIVERSITY SETIA BUDI, SURAKARTA.**

Superoxide Dismutase (SOD) enzyme is known as an antioxidant that can minimize tissue damage due to free radicals. SOD can be produced from bacteria on mangrove forest land. This study aims to isolate and find out the isolates that produce SOD activity, and measure the highest SOD activity and identify the isolates that are the highest SOD producers.

The samples used were 5 isolates that have been based on a different character macroscopically. Five bacterial isolates tested SOD activity with the WST-1 assay kit and produce a percentage inhibition value reduction. The highest SOD activity was shown with a large percentage of inhibition, then identified.

The percent inhibition results showed that all bacterial isolates had SOD activity where the highest SOD activity was THM1 with an inhibitory percent value of 74.51%. THM1 samples were tested conventionally with Gram positive results. Molecular test with PCR 16S rDNA showed the identity of THM1 isolates namely *Bacillus altitudinis* with 99% homology. Based on the search with the UniProt program it was proven that Cu-Zn SOD type SOD was registered.

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Keywords: free radicals, bacteria, mangrove, SOD