

ABSTRAK

FITRIANA NOVITA S., 2022, UJI AKTIVITAS ENZIM SUPEROKSIDA DISMUTASE (SOD) EKSTRAK DAUN SALAM (*Syzygium Polyanthum*) DENGAN METODE WATER SOLUBLE TETRAZOLIUM SALT-1 (WST-1). PROGRAM STUDI S1 FARMASI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Tanaman yang memiliki aktivitas SOD salah satunya adalah daun salam. Daun salam memiliki aktivitas SOD cukup tinggi sehingga dapat menangkal radikal bebas yang menyebabkan kerusakan sel didalam tubuh manusia menyebabkan beberapa penyakit. Tujuan dilakukannya riset guna mengerti kadar protein total serta pemurnian amonium sulfat serta persenan inhibisi ekstrak kasar enzim superoksida dismutase daun salam dengan konsentrasi amonium sulfat 25, 50, 75% dan nilai persenan inhibisi yang optimum dari konsentrasi amonium sulfat.

Riset ini menggunakan daun salam (*Syzygium polyanthum*) yang di ekstraksi dengan buffer fosfat dan disentrifugasi. Pemurnian enzim SOD dengan amonium sulfat konsentrasi 25, 50, 75%. Diukurnya kadar protein yang memakai metode *Lowry* serta uji aktivitas SOD menggunakan metode WST-1 untuk menghitung persen inhibisi. Hasil dilakukan analisa dengan cara statistik memakai *one way ANOVA*.

Hasil riset membuktikan ekstraksi SOD didapatkan ekstrak kasar 175 ml. Bobot pelet pemurnian amonium sulfat konsentrasi 25, 50, dan 75% berturut-turut sebesar 0,1252; 0,1860; 1,4687. Kadar protein total ekstrak kasar serta presipitasi amonium sulfat 25, 50, dan 75% secara berturut-turut sebesar 9,377; 6,356; 8,501; dan 11,6 mg/mL. Setelah itu nilai persen inhibisi dengan cara berurutan yakni 73,133; 34,327; 65,671; dan 80,590% dengan konsentrasi yang optimum adalah konsentrasi 75%.

Kata kunci : *Syzygium polyanthum*, radikal bebas, SOD, WST-1

ABSTRACT

FITRIANA NOVITA S., TEST ACTIVITY OF SUPEROXIDE DISMUTASE (SOD) ENZYME EXTRACT OF SALAM LEAF (*Syzygium Polyanthum*) WITH WATER SOLUBLE TETRAZOLIUM SALT-1 (WST-1) METHOD, THESIS, BACHELOR OF PHARMACY, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITAS, SURAKARTA.

Antioxidants are substances that can destroy free radicals. One of the antioxidant enzymes is SOD. One of the plants that have SOD activity is bay leaf because it has high enough SOD activity so it can ward off free radicals that damage cells in the human body causing several diseases. The aim of the research was to determine the total protein content and purification of ammonium sulfate and the percent inhibition of the crude extract of the superoxide dismutase enzyme of bay leaves with ammonium sulfate concentrations of 25, 50, 75% and the optimum inhibition value of the ammonium sulfate concentration.

This study used bay leaves (*Syzygium polyanthum*) extracted with phosphate buffer and centrifuged. SOD enzyme purification with ammonium sulfate concentrations of 25, 50, 75%. Measuring protein levels with the Lowry method and SOD activity test using the WST-1 method to calculate the percent inhibition. The results were statistically analyzed using one way ANOVA.

The results showed that the SOD extraction obtained 175 ml of crude extract. The weight of ammonium sulfate refining pellets with concentrations of 25, 50, and 75% were 0.1252; 0.1860; 1.4687. The total protein content of the crude extract and the ammonium sulfate precipitation of 25, 50, and 75% respectively were 9.377; 6.356; 8,501; and 11.6 mg/mL. Then the percentage inhibition values were 73.133; 34,327; 65,671; and 80.590% with the optimum concentration being 75%.

Keywords: *Syzygium polyanthum*, free radicals, SOD, WST-1