

ABSTRAK

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POTENSI ASPARAGUS (*ASPARAGUS OFFICINALIS*) SEBAGAI SENYAWA TROMBOLITIK

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(xiv + 46 Halaman; 7 Gambar; 1 Tabel; 7 Lampiran)

Trombosis merupakan salah satu penyebab kematian utama secara global. Penyakit kardiovaskular secara umum disebabkan oleh trombosis akibat koagulasi darah di pembuluh darah secara abnormal karena mekanisme trombosis yang memiliki koagulan seperti fibrinogen. Koagulasi atau trombosis yang tidak teregulasi oleh aktivitas trombolitik dapat menyebabkan masalah kesehatan kronis. Terapi trombolitik alami secara umum yang merupakan alternatif pengobatan komersil dapat diterapkan dengan enzim protease sistein. Enzim protease sistein yang terkandung pada asparagus (*Asparagus officinalis*) merupakan bahan penelitian atas dasar penelitian terdahulu yang menggunakan enzim protease sistein lain yang diperoleh dari tumbuhan. Hasil penelitian menggunakan ekstrak asparagus dengan berbagai konsentrasi berbeda menunjukkan persentase degradasi hingga 68% untuk sampel yang digunakan serta menimbulkan hasil visual terhadap degradasi yang cukup signifikan. Secara lebih lanjut potensi *Asparagus officinalis* juga teruji untuk dapat melakukan degradasi terhadap komponen euglobulin secara parsial pada rantai α - α (139 kDa), γ - α (194 kDa), dan γ - γ (79 kDa) dan penebalan band α (63 kDa), γ (47 kDa) dan β (54 kDa) akibat pemutusan rantai ganda fibrin dan akumulasi terhadap rantai tunggal fibrin yang tidak dapat di degradasi secara penuh. Secara umum, terdapat tren peningkatan dari hasil yang di dapat melalui kedua pengujian tersebut seiring dengan peningkatan konsentrasi dan waktu inkubasi. Hasil positif dari uji degradasi gumpalan darah dan hasil degradasi parsial pada uji degradasi euglobulin menunjukkan potensi asparagus sebagai agen trombolitik secara parsial.

Kata Kunci : *Asparagus Officinalis*, trombolitik, gumpalan darah, protease sistein

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ABSTRACT

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POTENTIAL OF ASPARAGUS *OFFICINALIS*) AS A (*ASPARAGUS* THROMBOLYTIC COMPOUND

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Thrombosis is one of the main cause of death globally. Cardiovascular diseases generally is caused by thrombosis due to blood coagulation in the cardiovascular sistem abnormally. Thrombosis mechanism that is formed by the blood plasma contains coagulants like fibrinogen. Coagulation or thrombosis that is unregulated by thrombolytic activities could cause a severe health problem. Natural thrombolytic therapy using cysteine protease could generally be an alternative for comercial thrombolytic treatment. Cysteine protease enzyme that is contained in asparagus (*Asparagus officinalis*) is the research subject based on the previous research using cysteine proteases sourced from other plants. Results of the research shows the percentage of whole blood clot degradation that reaches 68% for the sample used in this research. Furthermore the potential enzymatic activity of *Asparagus officinalis* is also tested by the degradation test of euglobulin that results in the degradation of euglobulin components such as the α (63 kDa), γ (47 kDa) and β (54 kDa) fibrin chains is not degraded but rather accumulated as the band thickens overtime. Meanwhile, The α - α (139 kDa), γ - α (194 kDa), γ - γ (79 kDa) chains that tend to degrade and have fading bands overtime. This could happen as bonded chains of fibrin that is degraded mau accumulate the single chains hence making the degradation to happen on double chains and accumulation of single chain that is not able to be degraded by the enzyme to occur. The general increasing trend from the results gained through the blood clot assay mentioned before as the concentration and incubation time increases. The results from the whole blood clot degradation assay and euglobulin lysis test shows the potential as a thrombolytic agent partially.

Keywords : *Asparagus officinalis* , thrombolytic, blood clot, cysteine protease

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