

# Pembuatan Selenium Yeast dan Isolasi Manan dan Glukan dari Ekstrak Khamir Hasil Fermentasi *Saccharomyces cerevisiae* untuk Bahan Baku Obat = Production of Selenium Yeast and Isolation of Mannan and Glukan from Yeast Extract by Fermented *Saccharomyces cerevisiae* for Medicinal Raw Materials

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## Abstrak

Selenium yeast merupakan salah satu sumber selenium dan ekstrak khamir merupakan sumber untuk memperoleh manan dan -glukan, namun di Indonesia untuk memperoleh selenium yeast masih sulit. Tujuan dari penelitian ini untuk mendapatkan metode pembuatan selenium yeast yang optimal serta isolasi manan dan -glukan dari ekstrak khamir hasil fermentasi *Saccharomyces cerevisiae*. Pembuatan selenium yeast dilakukan dengan variasi penambahan selenium yaitu konsentrasi 30 µg/mL [Selenium yeast A], 40 µg/mL [Selenium yeast B], dan 50 µg/mL [Selenium yeast C] pada kultur fase stasioner (84 jam), kemudian diinkubasi kembali selama 24 jam. Kadar selenium dianalisis dengan SSA dan proteinnya dianalisis dengan metode Bradford. Isolasi manan dan -glukan dengan menggunakan air dengan pemanasan, kemudian diendapkan dengan pelarut organik. Analisis manan dan -glukan dalam isolat dilakukan dengan KCKT-RID. Hasil pembuatan selenium yeast diperoleh selenium yeast A, B dan C masing-masing, sejumlah 2,5; 2,1 dan 2,0 g serta hasil analisis kadar selenium masing-masing yaitu 4258,0096; 5097,4238; 5508,9759 µg/g dan protein masing-masing yaitu 0,8505; 0,8642; 0,9900 mg/mL. Hasil isolasi manan dan -glukan masing-masing, sejumlah 0,2243 g dan 0,9130 g serta hasil analisis kadar manan dan -glukan masing-masing yaitu 76,63% dan 95,47%. Selenium yeast dengan kandungan selenium tertinggi dapat diperoleh dengan penambahan selenium konsentrasi 50 µg/mL pada kultur fase stasioner.

.....Selenium yeast is a source of selenium and yeast extract is a source for obtaining mannan and -glukan, but in Indonesia it is still difficult to obtain selenium yeast. The purpose of this study was to obtain an optimal method of producing selenium yeast and the isolation of mannan and -glukan from the fermentation of *Saccharomyces cerevisiae*. Selenium yeast was made by varying the addition of selenium, namely concentration 30 µg/mL [Selenium yeast A], 40 µg/mL [Selenium yeast B], and 50 µg/mL [Selenium yeast C] in stationary phase culture (84 hours), then incubated again for 24 hours. The contents of selenium were analyzed by AAS and the protein were analyzed by the Bradford method. Isolation of mannan and -glukan were using water with heating, then precipitated with organic solvent. Manan and -glukan analysis in isolates was carried out by HPLC-RID. The results of the manufacture of selenium yeast obtained selenium yeast A, B and C amounting to 2.5; 2.1 and 2.0 g, the results of the analysis content of selenium are 4258.0096; 5097.4238; 5508.9759 µg/g and protein are 0.8505; 0.8642; 0.9900 mg/mL, respectively. The results of the isolation of mannan and -glukan were 0.2243 g and 0.9130 g, the results of the analysis of the levels of mannan and -glukan were 76.63% and 95.47%, respectively. Selenium yeast with the highest selenium content can be obtained by adding selenium concentration of 50 µg/mL in the stationary phase culture.