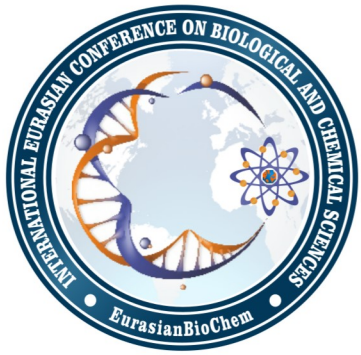


7th INTERNATIONAL EURASIAN CONFERENCE ON

BIOLOGICAL AND CHEMICAL SCIENCES

02 - 04 October 2024
Ankara / Turkey

(EurasianBioChem 2024)

www.eurasianbiochem.org

PROCEEDING BOOK

(Abstracts and Full-Texts)

EurasianBioChem

ISBN : 978-605-72134-4-0

7th International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2024)

October 02-04, 2024
Ankara, Turkey
www.EurasianBioChem.org

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Editor

Prof. Dr. Muhittin DOĞAN

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ISBN: 978-605-72134-4-0

Publication Date: October 2024

Organized by

Avrasya Araştırma Geliştirme Bilim ve Teknoloji Merkezi

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ORAL PRESENTATION

Comparative Yeast Beta Glucan Analysis by Using Different Carbohydrate Analysis Methods

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Abstract

Betaglucans are polysaccharides derived from oats, barley, yeast and fungi, consisting of D-glucose monomers linked together by β-glycosidic bonds and vary in molecular mass, solubility, viscosity and three-dimensional structure. Commercially available betaglucan products are generally offered as immune system supplements, health products and functional foods. Yeasts can be used as ideal raw materials for betaglucan production because they are cheaply available and their cell walls can have approximately 50-55% betaglucan content. In addition, studies show that yeast-derived betaglucans are the most effective immune system protective agent. In this study, analyses were carried out on yeast-derived beta glucan tablets available in the market as dietary supplements. The aim of this study was to establish a correlation between antron analysis, which is a total carbohydrate analysis, and DNS analysis, which is a reducing sugar analysis, and to analyse the beta glucan content without the need for enzymatic analysis which is an expensive and time consuming method. Thus, beta glucan analysis may be performed with accuracy by more fast, efficient and economical way. In the experiments, beta glucan samples was hydrolysed with H2SO4 firstly followed by antron, DNS and enzymatic analysis. By using three analysis method same procedure was repeated for glucose in order to draw a calibration graph. As a result of the enzymatic analysis, the beta glucan content of commercial sample was found to be %35.51 . According to the antron analysis, the total carbon content of it was 0.18 mg/mL and according to the DNS analysis, the reducing sugar content was obtained as 0.125 mg/mL. When the results obtained were examined, it was proved that beta glucan analysis can be performed without the need for enzymatic analysis thanks to the correlation between antron and DNS analyses.

Keywords: Yeast betaglucan, antron analysis, DNS analysis, enzimatic analysis.

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