Beta glucan: Heath benefits of optimal ingredients via the mixture ratio of rice bran and *Sarcodon aspratus*

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Abstract

Beta-glucan is a polymerized polysaccharide on beta-1,3 chemical bonds. It has the main pharmacological action of various anticancer mushrooms and is colorless and odorless. In addition, it enhances phagocytosis of macrophages against mycobacterium tuberculosism and increases resistance of host against food poisoning bacteria. Owing to these advantages, beta-glucan was used in various health supplement foods such as immune boosters, hypotensive agent and hypoglycemic agent. Our study was aimed to investigate the effective components of beta-glucan, which was optimized via the contents of *Sarcodon aspratus* and rice bran.

First, the mixture ratio condition of *Sarcodon aspratus* and rice bran were respectively 10:0, 7:3, 5:5, 3:7, and 0:10. The raw materials were fabricated using hot water extraction method. Distilled water of 100 mL was added to the raw material and extracted. After the extraction processed, the content of effective components was analyzed. The absorbance of beta-glucan was measured using a beta-glucan kit (Megazyme, (1-3) (1-4) BETA-D-GLUCAN ASSAY KIT). The absorbance analysis was repeated three times for accurate analysis. After the extracts were lyophilized, the yields of extracted raw materials according to the mixture ratio conditions of *Sarcodon aspratus* and rice bran (10:0, 7:3, 5:5, 3:7, and 0:10) were respectively 33.1%, 34.5%, 35.3%, 30.7%, and 24.3%. The absorbance was 1.52, 1.47, 1.50, 1.79, and 1.56, respectively. As a result, the optimum ratio of beta-glucan is 3:7 at *Sarcodon aspratus* and rice bran. This study suggested that the optimal amount of beta-glucan could be used as a health supplement foods and food additive such as immune boosters, hypotensive agent and hypoglycemic agent. However, the new condition (temperature, time) of hot water extraction to maximize the content of beta-glucan could be considered, could be necessary to compare with the existing extracts.

Keywords

Rice bran, *Sarcodon aspratus*, Beta-glucan, Extraction, Health benefits

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