

# B-GLUCAN FROM *SACCHAROMYCES CEREVISIAE* – THE NATURAL STIMULATOR OF IMMUNE SYSTEM

## Summary

In recent years, increased attention has been paid to  $\beta$ -glucans isolated from the cell walls of fungi that act as nonspecific modulators of immune system.  $\beta$ -glucan, a cell wall polysaccharide in many microorganism, fungi and algae, is a well-known biological response modifier (BRM). The cell wall of *Saccharomyces cerevisiae* consists of approximately 29–64%  $\beta$ -glucans.  $\beta$ -glucan from *Saccharomyces cerevisiae* possesses the strong positive influence on the immune system, resulting in antibacterial, wound-healing and antitumor activities. It is known that the immunomodulatory effects of  $\beta$ -glucans are influenced by their degree of branching, polymer lengths and tertiary structure. Most fungal  $\beta$ -glucans exhibit immunomodulatory activity when admin-

istered intravenously or intraperitoneally.  $\beta$ -glucan may directly activate cells, stimulating their phagocytic and antimicrobial activities, including the production of reactive intermediates and proinflammatory mediators, cytokines and chemokines.  $\beta$ -glucan receptor activity has subsequently been reported on a variety of other leukocytes, including macrophages, neutrophils, eosinophils and NK cells, as well as on nonimmune cells including endothelial cells, alveolar epithelial cells and fibroblasts. In addition to these,  $\beta$ -glucan also exhibits antioxidative capabilities. It is one of natural substances, known as antioxidants, which are able to protect living organisms from the attack of reactive radical species and in this way to decrease the risk of several diseases.