Reviewer's report

Title: Immune-modulatory effects of dietary yeast beta-1,3/1,6-D-glucan

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Reviewer: Venkatesh Hegde

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This review article focuses on an important area of immunomodulation by yeast-derived beta glucans and its significance which could be interesting to the readers of ‘Nutrition Journal’. The insoluble or particulate [1,3]-[1,6] branched chain #-glucans are believed to possess more profound immunomodulatory properties compared to other soluble glucans. The major focus in this article is on review of animal studies and human clinical trials using Yestimun®, a proprietary Brewer’s yeast-derived particulate beta glucan preparation. The need for and importance of such a focused review is reasoned based on the significance of immune stimulating effects of insoluble 1,3/1,6 #-glucans as well as variation in functionality of such glucans depending on the quality, purity, average molecular mass of the preparations as well as on the manufacturing processes used. The topic as such is important.

Major Compulsory Revisions

1. While the favorable report from European Food Safety Authority on the safety of the product (‘EFSA Panel on Dietetic Products NaAN: Scientific Opinion on the safety of ‘yeast beta-glucans’ as a Novel Food ingredient. EFSA Journal 2011, 9:2137’[22 pp]) has been cited by the authors, the following two reports from the same panel have not been mentioned:


In this report the Panel concludes that a cause and effect relationship was not established between the consumption of Yestimun® and the initiation of appropriate innate and adaptive immune responses.

Secondly,

doi:10.2903/j.efsa.2013.3159 in which the Panel notes that in the absence of an effect of Yestimun® in humans on defense against pathogens in the upper respiratory tract the submitted human, animal and in vitro studies pertaining to a possible mechanism by which Yestimun® could exert the claimed effect do not
provide any scientific evidence for the substantiation of the claim.

Since these reports from the expert panel are based on review of data/ evidence as well as conclusions from some of the important studies/ trials on Yestimun discussed in this article, these reports should be cited and discussed and the limitations of the studies in purview of these should be elaborated more thoroughly to arrive at more balanced conclusions.

2. Authors state that they aim to ‘present the in vitro and in vivo data, and results from clinical trials on Yestimun and compare with other yeast dietary b-glucan findings’. However, except for listing of brief descriptions of clinical trials on other glucans in section 4.1, an in-depth comparative discussion of studies and findings is lacking.

3. Information and discussion on the average molecular mass of proprietary Yestimun and other dietary yeast #-glucans and its significance on the observed structure-function relationship is lacking and should be included. Isn’t this (intermediate/ high molecular mass) an important factor contributing to their biological activity? and an important difference among #-glucans derived from different sources and different manufacturing processes?

Minor Essential Revisions

There are a number of typos and grammatical errors throughout the manuscript. The article needs to be carefully edited for such errors and revised to improve language and clarity.

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests