Reviewer's report

Title: Activation of Human T-Helper/Inducer Cell, T-Cytotoxic/Suppressor Cell, B-Cell, and Natural Killer (NK)-Cells and induction of Natural Killer Cell Activity against K562 Chronic Myeloid Leukemia Cells with Modified Citrus Pectin

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Reviewer: Khalid Matalka

Reviewer's report:

Major Compulsory Revisions
The authors describe the role of modified citrus pectin (MCP) on the activation of T helper, T cytotoxic, B and NK lymphocytes using a human blood drawn from healthy volunteers. In addition the functional activity of NK cells on K562 cell line and the carbohydrate composition of the MCP were identified. The major criticism of the manuscript that it does not discuss the mechanism of the MCP in inducing activation to T cytotoxic and NK cells and to lesser extent on B cells but not T helper cells. Also, such 400-800 µg/ml concentrations are they achievable following in vivo administration? A third point is the subtype T cytotoxic/suppressor cell which is an old and incorrect term. T cells expressing CD8 marker are identified as T cytotoxic cells, whereas T suppressor cells are now called T regulatory cells and they express CD4. The latter cells are of two types natural and inducer cells depending on the expression of FOXp3. Therefore, all terms mentioned in the text as T-cytotoxic/Suppressor should be replaced by T cytotoxic cells.

Minor Essential Revisions:
Abstract
The abstract is too long; mainly due to a very long method part in the abstract. I suggest revising it.

The term “strong” immunostimulatory properties…….. in the first conclusion statement (pages 3 & 12) is better to be rephrased.

Background
The last paragraph of page 5 regarding CD69 needs a reference and the first 3 paragraphs in page 6 can be summarized with the previous paragraph on page 5.

Methods
How many subjects/blood samples were utilized? Were each sample/subject considered a run? Then how many runs? Why a nonparametric test, Kruskal-Wallis, was used, and not Dunnett or Tukey as a post hoc test?

Separate the results from the discussion
In the results, use either % activation or % increase in activation (not both).
In the figures, it is better to change the format of x-axis to 0, 10, …..800 as concentration µg/ml and keep the positive controls as is. In the % activation, why the untreated bar is still presented even though the calculations is based on dividing over the untreated value? Figures should also indicate at which concentration significance started to appear.

A new discussion has to be written addressing the above points and addressing the action of MCP on NK cells and T cytotoxic activation.

References 19 and 20 have letters at the end of the year a and b and should be deleted.

Table 2 is not presented properly.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**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'