Reviewer's report

**Title:** Tocotrienols are less preferentially circulated in plasma and lipoproteins compared to alpha-tocopherol after a postprandial tocotrienol-rich vitamin E challenge

**Version:** 2 **Date:** 14 September 2011

**Reviewer:** Chandan K Sen

**Reviewer's report:**

The tocotrienol field is rapidly growing and although this work is limited in innovation, it could be a valuable reference in the literature. Most significant concerns are related to writing style and are fixable.

Revisions Required:

1. The title is not appealing because it is well know that tocotrienols are less preferentially circulated than a-tocopherol. Because tocopherols and tocotrienols serve different functions that hardly matters. Focus on tocotrienols make this work valuable. Furthermore, this is the first work (or among first) to show 4-5 micromolar a-tocotrienol in human circulation. Emphasis on that observation would make this report a powerful source.

Suggested title:

"alpha-Tocotrienol is the most abundant form of tocotrienol circulated in plasma and lipoproteins after postprandial tocotrienol-rich vitamin E supplementation"

OR

"Postprandial tocotrienol-rich vitamin E supplementation results in >4 micromolar concentration of alpha-tocotrienol in human circulation"

it is good to have tocopherol data as reference point but title claim needs to be highlighting innovation.

2. change all data from microgram/ml to micromolar

3. Along the lines of revised title, suggest minor edits to BACKGROUND. Suggested BACKGROUND: Tocotrienols (T3) and tocopherols (T) are both members of the natural vitamin E family with unique biological functions in human health and disease. a-T3 are known to be neuropotective at nanomolar concentrations. This study evaluated the postprandial fate of T3 and #-T in plasma and lipoproteins.

4. Although it is OK to comment on comparison of T and T3 delivery in DISCUSSION do state that T3 have biological functions well below concentration noted in this study. Also, remove discussion of such comparison from
INTRODUCTION and CONCLUSION as it is not novel and the biological relevance of such comparison is questionable.

5. Emphasize in DISCUSSION and CONCLUSION which of the known functions of T3 are likely to work in humans on the basis of concentration needed for effect.

6. note that rapid disappearance of T3 could be because of preferential utilization

7. because T3 and T serve different biological functions, suggest de-emphasizing comment on Vit E biological activity (Ref 22).

With these changes this work would be a valuable addition to the literature.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

Tocotrienol research in our laboratory is extramurally funded from sponsors such as NIH, MPOB and industry. Funding is directly received by our University. No other conflicts.